

# Office Action Summary

**Application No.**

10/576,642

**Applicant(s)**

COLE, MARTIN TERENCE

**Examiner**

/Michael P. Stafira/

**Art Unit**

2886

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 4-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 4-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI/02)  
Paper No(s)/Mail Date \_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_

### **DETAILED ACTION**

1. Prosecution on the merits of this application is reopened on claims 1, 4-16 are considered unpatentable for the reasons indicated below:

#### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 4-16, 44, 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 01/59737 A1 in view of Booth et al. ('445) and in further view of Curry et al. ('939).

#### **Claim 1**

WO 01/59737 A1 discloses providing the sample in a chamber (See Fig. 1) illuminating the sample in the chamber with a first wavelength of light, obtaining a first response signal indicative of the first illumination, illuminating the sample in the chamber with a second wavelength of light, obtaining a second response signal indicative of the second illumination (Page 6, lines 25-31), and determining the presence of the particles having the size or range of

size(s) (Page 14, lines 10-11), while canceling out influences on the first signal and on the second signal due to changes in the chamber that occur over time, by subtracting the first signal from the second signal (Col. 21-22, lines 63-21).

WO 01/59737 A1 in view of Curry et al. ('939) substantially teaches the claimed invention except that it does not show subtracting the first signal from the second signal (Col. 21-22, lines 63-21). Booth et al. ('445) shows that it is known to provide a method of subtracting the first signal from the second signal (Col. 21-22, lines 63-21) for an optical smoke detector. It would have been obvious to combine the device of WO 01/59737 A1 in combination with Curry et al. ('939) with the canceling out influences of Booth et al. ('445) for the purpose of providing a calibration method which provides a more sensitive measured data, therefore providing more accurate measured information which increases reliability.

WO 01/59737 A1 in view of Booth et al. ('445) substantially teaches the claimed invention except that it does not show the use of substantially horizontal and/or vertically polarized light. Curry et al. ('939) shows that it is known to provide light at a horizontal or vertical polarized light (Col. 4, lines 1-19) for an apparatus for measuring particles in a flow chamber. It would have been obvious to combine the device of WO 01/59737 A1 in view of Booth et al. ('445) with the horizontal and/or vertical polarized light of Curry et al. ('939) for the purpose of providing a high intensity light output at certain wavelengths, therefore increasing the accuracy of measuring particles in the submicron diameter range.

#### **Claim 4**

WO 01/59737 A1 discloses the second wavelength provides a response signal for particle sizes both substantially of the size or in the predetermined range and particle sizes substantially

not of the size or outside the predetermined range, and the first wavelength provides a response signal for particle sizes substantially not of the size or outside the predetermined range (Page 14, lines 2-9).

**Claim 5**

WO 01/59737 A1 discloses upon detecting particles of the predetermined size(s), triggering an alarm signal (Page 14, lines 12-19).

**Claim 6**

WO 01/59737 A1 discloses the alarm signal is indicative of an alarm condition for a pyrolysis, smouldering and/or smoke event (Page 14, lines 12-19).

**Claim 7**

WO 01/59737 A1 discloses the first wavelength is infrared light and the second wavelength is blue light (Page 12, lines 7-9).

**Claim 8**

WO 01/59737 A1 discloses the first wavelength of light is in the range of 650 nm to 1050 nm, and second wavelength of light is in the range of 400 nm to 500 nm (Page 12, lines 7-9).

**Claim 9**

WO 01/59737 A1 discloses illuminating the sample with at least one further wavelength of light, in which particles of at least one further size(s) or range of size(s) are relatively responsive to the further wavelength of light, obtaining at least one further response signal(s) indicative of the further illumination, and determining the presence of the particles of the further size(s) or range of sizes by comparing the first, second and/or further signal(s) (Page. 14, lines 2-14).

**Claim 10**

WO 01/59737 A1 discloses at least one of the illuminations is polarized (Page 7, lines 3-5).

**Claim 11**

WO 01/59737 A1 further discloses at least one of the illuminations is horizontally and/or vertically polarized (Page 7, lines 3-5).

**Claim 12**

WO 01/59737 A1 further discloses the first illumination is a relatively longer wavelength horizontally polarized and the second illumination is a relatively short wavelength vertically polarized (Page 20, Claim 2) .

**Claim 13**

WO 01/59737 A1 discloses the first illumination is a red or infrared light horizontally polarized and the second illumination is a blue wavelength light vertically polarized (Page 12, lines 12-14).

**Claim 14**

WO 01/59737 A1 further discloses the first illumination is a red or infrared light horizontally polarized and the second illumination is a blue light un-polarized (Page 12, lines 12-15).

**Claim 15**

WO 01/59737 A1 discloses first illumination means for illuminating the sample in the chamber with a first wavelength of light, the first light being of a wavelength to which particles of a first size(s) are relatively responsive, a first signal means for providing a first signal

indicative of the first illumination (Page 6, 25-31), second illumination means for illuminating the sample with a second wavelength of light, the second light being of a wavelength to which particles of a second size(s) are relatively responsive, a second signal means for providing a second signal indicative of the second illumination (Page 6, 25-31), logic means for determining the presence of the particles in the predetermined range (Page 14, lines 5-19).

WO 01/59737 A1 in view of Curry et al. ('939) substantially teaches the claimed invention except that it does not show a logic means for subtracting the first signal from the second signal (Col. 21-22, lines 63-21). Booth et al. ('445) shows that it is known to provide a method of subtracting the first signal from the second signal (Col. 21-22, lines 63-21) for an optical smoke detector. It would have been obvious to combine the device of WO 01/59737 A1 in combination with Curry et al. ('939) with the subtracting signals of Booth et al. ('445) for the purpose of providing a calibration method which provides a more sensitive measured data, therefore providing more accurate measured information which increases reliability.

WO 01/59737 A1 in view of Booth et al. ('445) substantially teaches the claimed invention except that it does not show the use of substantially horizontal and/or vertically polarized light. Curry et al. ('939) shows that it is known to provide light at a horizontal or vertical polarized light (Col. 4, lines 1-19) for an apparatus for measuring particles in a flow chamber. It would have been obvious to combine the device of WO 01/59737 A1 in view of Booth et al. ('445) with the horizontal and/or vertical polarized light of Curry et al. ('939) for the purpose of providing a high intensity light output at certain wavelengths, therefore increasing the accuracy of measuring particles in the submicron diameter range.

**Claim 16**

WO 01/59737 A1 discloses processor means (Pages 14, lines 12-19) adapted to operate in accordance with a predetermined instruction set, said apparatus, in conjunction with said instruction set, being adapted to perform the method comprising the steps of: illuminating the sample in the chamber with a first wavelength of light, obtaining a first response signal indicative of the first illumination (Page 6, lines 25-31), illuminating the sample in the chamber with a second wavelength of light, obtaining a second response signal indicative of the second illumination (Page 6, lines 25-31), and determining the presence of the particles having the size or range of size(s) (Page 14, lines 10-11).

WO 01/59737 A1 in combination with Curry et al. ('939) substantially teaches the claimed invention except that it does not show subtracting the first signal from the second signal (Col. 21-22, lines 63-21). Booth et al. ('445) shows that it is known to provide a method of subtracting the first signal from the second signal (Col. 21-22, lines 63-21) for an optical smoke detector. It would have been obvious to combine the device of WO 01/59737 A1 in combination with Curry et al. ('939) with the canceling out influences of Booth et al. ('445) for the purpose of providing a calibration method which provides a more sensitive measured data, therefore providing more accurate measured information which increases reliability.

WO 01/59737 A1 in view of Booth et al. ('445) substantially teaches the claimed invention except that it does not show the use of substantially horizontal and/or vertically polarized light. Curry et al. ('939) shows that it is known to provide light at a horizontal or vertical polarized light (Col. 4, lines 1-19) for an apparatus for measuring particles in a flow chamber. It would have been obvious to combine the device of WO 01/59737 A1 in view of

Booth et al. ('445) with the horizontal and/or vertical polarized light of Curry et al. ('939) for the purpose of providing a high intensity light output at certain wavelengths, therefore increasing the accuracy of measuring particles in the submicron diameter range.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to /Michael P. Stafira/ whose telephone number is 571-272-2430. The examiner can normally be reached on 4/10 Schedule Mon.-Thurs..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tarifur Chowdhury can be reached on 571-272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael P. Stafira/  
Primary Examiner  
Art Unit 2886

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